



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0984; Project Identifier MCAI-2022-00236-T; Amendment 39-22207; AD 2022-21-08]

RIN 2120-AA64

Airworthiness Directives; Embraer S.A. Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Embraer S.A. Model EMB-545 airplanes. This AD was prompted by an error that was detected in the airplane takeoff configuration warning logic. The error prevents the system from sounding an aural alert “No Takeoff Trim” for the flightcrew. This AD requires the installation of a new software version of engine indication and crew alert system (EICAS), as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is incorporated by reference. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0984; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday

through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- For material incorporated by reference (IBR) in this AD, contact ANAC, Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, Brazil; telephone 55 (12) 3203-6600; email pac@anac.gov.br; website anac.gov.br/en/. You may find this IBR material on the ANAC website at sistemas.anac.gov.br/certificacao/DA/DAE.asp.

- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available in the AD docket at regulations.gov under Docket No. FAA-2022-0984.

FOR FURTHER INFORMATION CONTACT: Hassan Ibrahim, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3653; email Hassan.M.Ibrahim@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Embraer S.A. Model EMB-545 airplanes. The NPRM published in the *Federal Register* on July 29, 2022 (87 FR 45707). The NPRM was prompted by AD 2022-02-02, effective February 23, 2022, issued by ANAC, which is the aviation authority for Brazil (referred to after this as the MCAI). The

MCAI states that an error was detected in the airplane takeoff configuration warning logic. The error prevents the system from sounding an aural alert “No Takeoff Trim” for the flightcrew, if the pitch trim is in a position that would not allow a safe takeoff (positioned out of the green band indication).

In the NPRM, the FAA proposed to require installation of a new software version of EICAS, as specified in ANAC AD 2022-02-02. The FAA is issuing this AD to address the lack of sound aural alert “No Takeoff Trim” to the flightcrew on a possibly misconfigured airplane, which could result in loss of airplane controllability.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0984.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA’s bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on this product. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information Under 1 CFR Part 51

ANAC AD 2022-02-02 specifies procedures for installation of a new software version of EICAS.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

The FAA estimates that this AD affects 41 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated costs for required actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
3.5 work-hours X \$85 per hour = \$297.50	*	\$297.50	\$12,197.50

*The FAA has received no definitive data on which to base the cost estimates for the parts specified in this AD.

According to the manufacturer, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all known costs in the cost estimate.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2022-21-08 Embraer S.A.: Amendment 39-22207; Docket No. FAA-2022-0984; Project Identifier MCAI-2022-00236-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Embraer S.A. Model EMB-545 airplanes, certificated in any category, as identified in Agência Nacional de Aviação Civil (ANAC) AD 2022-02-02, effective February 23, 2022 (ANAC AD 2022-02-02).

(d) Subject

Air Transport Association (ATA) of America Code 27, Flight Controls.

(e) Unsafe Condition

This AD was prompted by an error that was detected in the airplane takeoff configuration warning logic. The error prevents the system from sounding an aural alert “No Takeoff Trim” for the flightcrew, if the pitch trim is in a position that would not allow a safe takeoff (positioned out of the green band indication). The FAA is issuing this AD to address the lack of sound aural alert “No Takeoff Trim” to the flightcrew on a possibly misconfigured airplane, which could result in loss of airplane controllability.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraphs (h) and (i) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, ANAC AD 2022-02-02.

(h) Exceptions to ANAC AD 2022-02-02

(1) Where ANAC AD 2022-02-02 refers to its effective date, this AD requires using the effective date of this AD.

(2) The “Alternative methods of compliance (AMOC)” section of ANAC AD 2022-02-02 does not apply to this AD.

(3) Where paragraph (b) of ANAC AD 2022-02-02 specifies acceptable higher software versions, replace “For higher software versions, use the applicable Service Bulletin recommended by the Manufacturer” with “For higher software versions, use the applicable Service Bulletin approved by ANAC and recommended by the Manufacturer.”

(i) No Reporting Required

Although the service information referenced in ANAC AD 2022-02-02 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Additional AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the International Validation Branch, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method

approved by the Manager, International Validation Branch, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

(k) Additional Information

For more information about this AD, contact Hassan Ibrahim, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone 206-231-3653; email Hassan.M.Ibrahim@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Agência Nacional de Aviação Civil (ANAC) AD 2022-02-02, effective February 23, 2022.

(ii) [Reserved]

(3) For ANAC AD 2022-02-02, contact ANAC, Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, Brazil; telephone 55 (12) 3203-6600; email pac@anac.gov.br; website anac.gov.br/en/. You may find this ANAC AD on the ANAC website at sistemas.anac.gov.br/certificacao/DA/DAE.asp.

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on October 3, 2022.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2022-24988 Filed: 11/16/2022 8:45 am; Publication Date: 11/17/2022]